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ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	Applicant(s)
Office Action Summary		10/753,368	KIM ET AL.
		Examiner	Art Unit
		Parul Gupta	2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *09 January 2004*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-32* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-32* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some *   c)☐ None of:

      1. ☒ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-32 are pending for examination as interpreted by the examiner. No IDS

was considered.

Specification

2.   The disclosure is objected to because of the following informalities: minor

typographical errors such as the misspelling of the word "does" in paragraph 0141.

Appropriate correction is required.

Claim Objections

3.   Claim 30 is objected to because of the following informalities: minor

typographical errors such as the misspelling of the word "least". Appropriate correction

is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

4.   Claims 7 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

Claim 7 recites the limitation "at least one" regarding the number of sync signals.

Claim 8 recites the limitation "at least three" regarding the number of sync signals. The

three signals are interpreted by the examiner to be the two sync signals of the linking

area and the one sync signal of the data area. There is insufficient antecedent basis for

these limitations in the claims.

Claim Rejections - 35 USC § 102

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5.   Claims 1-7, 15, 17-21, 23, 25-26, and 29-31 are rejected under 35 U.S.C. 102(a)

as being anticipated by Kuroda et al., US Patent 6,735,155.

Regarding claim 1, Kuroda et al. discloses in figure 7 recording medium,

comprising: a data area including at least two data sections ("new data" and "old data"

areas); and a linking area (40) to link neighboring data sections, the linking area

including at least two frame sync signals (shown in first 42 and second 42), where

values of the at least two frame sync signals maintain uniqueness (explained in column

12, lines 8-15 by different functions of each sync frame).

Regarding claim 2, Kuroda et al. discloses in figure 7 the recording medium of

claim 1, wherein the linking area (40) includes at least two linking frames (42 and 42), a

first linking frame and a second linking frame, wherein at least one frame sync signal is

included in each linking frame (signal in each frame).

Regarding claim 3, Kuroda et al. discloses in figure 7 the recording medium of

claim 2, wherein each linking frame (42) includes at least one frame sync signal

(element 21) at a front of the linking frame. Column 12, lines 60-67 describes how the

information area is used to accurately perform the consecutive reproduction of the

recorded information. Thus, the section explains how the ID section is used to synch the

old data and the new data, making it a sync signal. The same ID is used for both

frames.

Regarding claim 4, Kuroda et al. discloses in figure 7 the recording medium of claim 1, wherein each frame synch signal (42) includes a frame synch number (44) and a frame synch ID (21). The same ID is used for both frames.

Regarding claim 5, Kuroda et al. discloses in figure 1 the recording medium of claim 1, wherein the data area includes at least one sync signal (21).

Regarding claim 6, Kuroda et al. discloses the recording medium of claim 5, wherein the at least two frame sync signals in the linking frames are different from the at least one sync signal in the data area. As the ID information used in the sync process is different in the data area than the linking area, the signals must inherently be different.

Regarding claim 7, Kuroda et al. discloses the recording medium of claim 1, wherein said at least one frame sync signal is different from a sync signal written on a rewritable or recordable recording medium during data recording (column 12, lines 8-13).

Regarding claim 15, Kuroda et al. discloses in figure 7 the recording medium of claim 1, wherein a signal distance between the at least two frame sync signals maintains uniqueness. As the two given frames (42 and 42) have different sections in each frame, the signal distance must inherently be different.

Regarding claim 17, Kuroda et al. discloses the recording medium of claim 1, wherein the at least two frame sync signals maintain uniqueness over n frames, where $n \geq 2$ (explained in column 12, lines 8-15 by different functions of each sync frame).

Regarding claim 18, Kuroda et al. discloses the recording medium of claim 17, wherein the at least two frame sync signals maintain uniqueness over n frames, where

n≥4. Column 11, lines 6-15 explain that there are 2 sync frames for the old data and 2

for the new data. As each frame consists of different information, there are a total of 4

frames where the signals maintain uniqueness.

Regarding claim 19, Kuroda et al. discloses a method of forming a recording

medium, comprising: forming a linking area to link neighboring data sections of a data

area while recording data onto the recording medium (column 12, lines 8-10); selecting

values of at least two frame sync signals, to maintain uniqueness (column 12, lines 13-

15 describe how the two are used for different purposes, suggesting different values);

and writing the at least two frame sync signals in the linking area to link the neighboring

data sections (column 12, lines 8-15).

Regarding claim 20, Kuroda et al. discloses a method of reproducing data from a

recording medium, comprising: utilizing a linking area, including at least two frame sync

signals, which maintain uniqueness and link neighboring data sections of a data area, to

reproduce the data (column 12, lines 8-15).

Regarding claim 21, Kuroda et al. teaches the method of claim 20, further

comprises, determining whether or not a current position is a linking area based on the

at least one frame sync signal. As the data pattern in the linking area is different from

the data area (column 12, lines 8-13), the ability to determine the area based on the

signal would be inherent.

Regarding claim 23, Kuroda et al. discloses the method of claim 20, wherein the

data section has at least seven different frame sync signals (column 7, lines 1-12), and

two frame sync signals of linking area are different from the seven different sync signals

of the data section (column 12, lines 8-13).

Regarding claim 25, Kuroda et al. discloses a method of recording data on a

recording medium, comprising: utilizing a linking area, including at least two frame sync

signals, wherein the at least two frame sync signals maintain uniqueness and are

different from a sync signal included in the data area (as the ID information used in the

sync process is different in the data area than the linking area, the signals must

inherently be different), to record the data (column 12, lines 8-15).

Regarding claim 26, Kuroda et al. discloses the method of claim 25, wherein a

data section of data area has at least seven different frame sync signals (column 7,

lines 1-12), and the at least two frame sync signals of the linking area are different from

the seven different sync signals of the data section (column 12, lines 8-13).

Regarding claim 29, Kuroda et al. discloses in figure 3 an apparatus for

reproducing data from a recording medium, said apparatus utilizing a linking area (40),

including at least two frame sync signals, which maintain uniqueness and link

neighboring data sections of a data area, to reproduce the data (column 12, lines 8-15).

Regarding claim 30, Kuroda et al. discloses in figure 7 a recording medium,

comprising: a data area of at least two data sections (old and new data areas), and a

linking area (40) between the data sections, wherein the linking area includes at least

two linking frames (42 and 42), a first linking frame and a second linking frame which

each include at lest one frame sync signal (signal in each frame), where each frame

sync signals maintain uniqueness (explained in column 12, lines 8-15 by different

functions of each sync frame) and is different from a sync signal included in the data

section (as the ID information used in the sync process is different in the data area than

the linking area, the signals must inherently be different).

Regarding claim 31, Kuroda et al. discloses the recording medium of claim 30,

wherein a data section of the data area has at least seven different frame sync signals

(column 7, lines 1-12), and the at least two frame sync signals of the linking area are

different from the seven different sync signals of the data section (column 12, lines 8-

13).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tachino

et al., US Patent 7,065,030 in view of Kuroda et al.

Kuroda et al. teaches the limitations of claim 5, but fails to teach the further

limitations of claim 8. Kuroda et al. also teaches the two sync signals of the linking area

and the one sync signal of the data area as given in the rejections of claims 1 and 5.

Regarding claim 8, Tachino et al. teaches in figure 11B the recording medium of

claim 5, wherein the at least three sync signals are different from each other (reference

contains 7 different signals) and a recorded order of the at least three sync signals is

reverse of a recorded order of at least three sync signals written in a linking area of a rewritable or recordable recording medium.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of recording the sync signals in a reverse order as taught by Tachino et al. into the system of Kuroda et al. The motivation would be to create a read-only recording medium with a data format highly compatible with a recording/reproduction medium (column 3, lines 7-9 of Tachino et al.).

7.   Claims 9-14, 24, 27-28, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al. in view of Sako et al., US Patent 6,971,024.

Kuroda et al. teaches the limitations of claims 4, 23, 26, and 31, but fails to teach the further limitations of claims 9-14, 24, 27, and 32.

Regarding claim 9, Sako et al. teaches the recording medium of claim 4, wherein each frame sync ID is one of `100 101`, `101 010`, `010 101`or `101 001` (column 9, lines 12-20). The given section does not teach those specific values, but teaches that the unique pattern of the frame sync is used in detection, similarly to the purpose of the applicant. Thus, it would be a matter of obvious design choice to use any ID numbers as long as they are unique in comparison to other regions.

Regarding claim 10, Sako et al. teaches the recording medium of claim 9, wherein a frame sync signal written in a first linking frame is `100 101` and a frame sync signal written in a second linking frame is `101 010` (column 9, lines 12-20). The given section does not teach those specific values, but teaches that the unique pattern of the frame sync is used in detection, similarly to the purpose of the applicant. Thus, it would

be a matter of obvious design choice to use any ID numbers as long as they are unique in comparison to other regions.

Regarding claim 11, Sako et al. teaches the recording medium of claim 10, wherein a value of `00` follows the frame sync signal of each linking frame (column 9, lines 12-20). The given section does not teach those specific values, but teaches that the unique pattern of the frame sync is used in detection, similarly to the purpose of the applicant. Thus, it would be a matter of obvious design choice to use any ID numbers as long as they are unique in comparison to other regions.

Regarding claim 12, Sako et al. teaches the recording medium of claim 11, wherein a physical address follows the value of `00` (column 9, lines 12-20). The given section does not teach those specific values, but teaches that the unique pattern of the frame sync is used in detection, similarly to the purpose of the applicant. Thus, it would be a matter of obvious design choice to use any ID numbers as long as they are unique in comparison to other regions.

Regarding claim 13, Sako et al. teaches the recording medium of claim 10, wherein a value of `08h` follows the frame sync signal of each linking frame (column 9, lines 12-20). The given section does not teach those specific values, but teaches that the unique pattern of the frame sync is used in detection, similarly to the purpose of the applicant. Thus, it would be a matter of obvious design choice to use any ID numbers as long as they are unique in comparison to other regions.

Regarding claim 14, Sako et al. teaches the recording medium of claim 13, wherein a value of `00h` follows the value of `08h` for a remainder of the linking frame

(column 9, lines 12-20). The given section does not teach those specific values, but teaches that the unique pattern of the frame sync is used in detection, similarly to the purpose of the applicant. Thus, it would be a matter of obvious design choice to use any ID numbers as long as they are unique in comparison to other regions.

Regarding claim 24, Sako et al. teaches the method of claim 23, wherein one of the at least two frame sync signals is a frame sync signal of bit pattern "100 101", and another is a frame sync signal of bit pattern "101 010" (column 9, lines 12-20). The given section does not teach those specific values, but teaches that the unique pattern of the frame sync is used in detection, similarly to the purpose of the applicant. Thus, it would be a matter of obvious design choice to use any ID numbers as long as they are unique in comparison to other regions.

Regarding claim 27, Sako et al. teaches the method of claim 26, wherein one of the at least two frame sync signals is a frame sync signal of bit pattern "100 101", and another is a frame sync signal of bit pattern "101 010" (column 9, lines 12-20). The given section does not teach those specific values, but teaches that the unique pattern of the frame sync is used in detection, similarly to the purpose of the applicant. Thus, it would be a matter of obvious design choice to use any ID numbers as long as they are unique in comparison to other regions.

Regarding claim 28, Kuroda et al. discloses the method of claim 27, wherein the first and second frame sync signals are recorded in order between two data sections (shown in figure 7 by elements 42 and explained in column 12, lines 8-15).

Regarding claim 32, Sako et al. teaches the method of claim 31, wherein one of the at least two frame sync signals is a frame sync signal of bit pattern "100 101", and another is second frame sync signal of bit pattern "101 010" (column 9, lines 12-20). The given section does not teach those specific values, but teaches that the unique pattern of the frame sync is used in detection, similarly to the purpose of the applicant. Thus, it would be a matter of obvious design choice to use any ID numbers as long as they are unique in comparison to other regions.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of keeping the ID of the frame sync signal unique as taught by Sako et al. into the system of Kuroda et al. The motivation would be to have the frame be detectable due to the unique pattern (column 9, lines 12-20 of Sako et al.).

8.   Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al. in view of Nakagawa et al., US Patent 6,879,637.

Kuroda et al. teaches the limitations of claim 15, but fails to teach the further limitations of claim 16.

Regarding claim 16, Nakagawa et al. teaches the recording medium of claim 15, wherein the signal distance between the at least two frame sync signals is at least two (column 9, lines 28-30).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of the signal distance and the position detector as taught by Nakagawa et al. into the system of Kuroda et al. The motivation would be to make sure the sync signals have such patterns that they may be distinguished from one another (column 6, lines 1-4 of Nakagawa) and to provide a more reliable pattern for a sync signal (column 6, lines 17-20 of Nakagawa).

9.   Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al. in view of Fujimoto et al., US Patent 6,191,903.

Kuroda et al. teaches the limitations of claim 20, but fails to teach the further limitations of claim 22.

Regarding claim 22, Fujimoto et al. teaches the method of claim 20, further comprises, determining whether a current position is a front or rear of the data section based on the at least one frame sync signal (column 2, lines 4-10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of detecting current position based on the frame sync signal as taught by Fujimoto et al. into the system of Kuroda et al. The motivation would be to make it possible to restore the data to be successively reproduced (column 2, lines 4-10 of Fujimoto et al.).

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Van Woudenberg et al., US 6,724,707, discloses similar 2T and 3T patterns.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Parul Gupta whose telephone number is 571-272-5260.

The examiner can normally be reached on Monday through Thursday, from 8:30 AM to

7 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Andrea Wellington can be reached on 571-272-4483. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PHG
9/5/06

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